

measures of both democracy and learning outcomes, and even fewer have adequate measures regarding classroom diversity and contact with diverse peers; and (3) no single institution has followed its students in relation to understanding diversity, and the quality of experiences students have in contact with diverse peers, each year of college attendance (for four years). One is not likely to find such detailed and multiple ways of understanding how diversity works in any single study currently in the research literature. Still, this broad and extensive analysis has many portions of it confirmed in other small and large studies in social science.

In short, this report presents both a theory of students' capacity to learn and acquire skills from diverse peers and a set of analyses equivalent to years of replication studies that strongly support the theory by showing that students, indeed, acquire a very broad range of skills, motivations, values, and

cognitive capacities from diverse peers when provided with the appropriate opportunities to do so. A range of studies conducted in education, sociology, and psychology also confirms these results (see Appendix A), and taken together they reflect our collective advancement in understanding the opportunities and complexities that social diversity has presented to our educational institutions. In the face of this research evidence, one can only remain unconvinced about the impact of diversity if one believes that students are "empty vessels" to be filled with specific content knowledge. Much to our chagrin as educators, we are compelled to understand that students' hearts and minds may be impacted most by what they learn from peers. This is precisely why the diversity of the student body is essential to fulfilling higher education's mission to enhance learning and encourage democratic outcomes and values.

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## APPENDIX B

### THE IMPACT OF STRUCTURAL DIVERSITY, CLASSROOM DIVERSITY, AND INFORMAL INTERACTIONAL DIVERSITY ON EDUCATION: SOCIAL SCIENCE RESEARCH EVIDENCE

Much of the empirical analysis presented in the body of this Report is supported by work conducted by other researchers, many of whom have used different national and single-institution data bases than the ones employed for this litigation. There is a substantial body of empirical social science literature that explains aspects of how diversity in colleges and universities is linked with the education of students and their development of important learning and democracy outcomes. These studies confirm aspects of the empirical analyses conducted for this litigation as well as provide further support for the theoretical explanation of how diversity influences social interaction, students' cognitive processes, and ultimately educational outcomes that are important for a pluralistic democracy. This Appendix presents a review of that literature.

Given our history of race relations, diversifying communities and college campuses has not been without difficulties. After much trial, error, and opportunity to study successes and problems, institutions are realizing the benefits of incorporating diversity as a key part of their

educational mission. Three points are becoming clear from years of research evidence: First, individuals who have been educated in diverse settings are far more likely to work and live in racially and ethnically diverse environments after they graduate; second, individuals who studied and discussed issues related to race and ethnicity in their academic courses and interacted with a diverse set of peers in college are better prepared for life in an increasingly complex and diverse society; and third, increasing the number of diverse students is essential, but colleges have to create the conditions to maximize learning and democratic outcomes in racially/ethnically diverse educational environments. These conclusions are evident in studies that monitor the impact of these various forms of diversity across one semester of course work, in the first year of college, over four years of college, and over the long term through work and residence in desegregated environments after college. These conclusions are drawn from many studies, some of which have yet to be published but have been presented in peer-reviewed research forums, representing the ongoing work of many scholars in the fields of psychology, sociology, and education.

#### RESEARCH ON THE IMPACT OF STRUCTURAL DIVERSITY

Evaluating the impact of structural diversity, or having a racially/ethnically diverse student body, in relationship to learning and democracy outcomes requires understanding the complexity that diversity presents in American society. Institutions of higher education that deliberately provide opportunities for positive intergroup interactions as they improve the representation of different racial/ethnic groups on campus are able to create the conditions for the positive effects of diversity on student development. As the

educational institution becomes more multicultural in focus and its functioning, it is able to realize the benefits of various forms of diversity for all students. Research supports these different points and show that *structural diversity improves opportunities for interaction, which in turn, has positive effects on learning and democracy outcomes.*

## Benefits of Structural Diversity: Opportunities for Interaction

**R**esearch studies show that attaining a diverse student body results in significantly more opportunities, inside and outside the classroom, for all students to interact with and learn from others of different racial and cultural backgrounds. Longitudinal studies show that white students are more likely to report socializing with someone from a different race and discussing racial issues on campuses with a heterogeneous student body (Chang, 1996). Further, attendance on a multicultural campus results in more diverse friendship groups, which in turn, is associated with more frequent interracial interaction outside of the friendship group (Antonio, 1998). These studies on college campuses reflect similar findings of studies in elementary and secondary schools: students who were engaged in racially diverse cooperative learning groups in desegregated schools also reported more cross-race friendships outside these groups (Slavin, 1985). Consistent with these findings, college campuses with high proportions of white students result in few interracial friendships (Springer, 1995). Low proportions of minorities provide limited opportunities for interaction across race/ethnicity, thereby limiting potential student learning experiences with diverse groups among white students (Hurtado, Dey, & Treviño, 1994). These studies support the notion that the enrollment of socially and culturally different students is critical in shaping the dynamics of social interaction within educational environments.

Aside from opportunities for increased interaction, what are the benefits for white students attending racially/ethnically diverse campuses? Very few studies have attempted directly to test these effects as it applies to white students' academic and democratic outcomes in relation to structural diversity. Nevertheless, one national study found direct effects on democracy outcomes: After four years of college, greater social concern and humanitarian values were evident among white students attending

predominantly white, public universities with relatively high levels of racial diversity (Deppe, 1989). This finding attests to increases in white students' interest in the betterment of society on more diverse campuses, an important democracy outcome. In a test of the impact of diversity on learning outcomes, Chang (1996) found most of the positive effects on students' learning outcomes to be associated directly with diversity-related experiences (informal interactions) which occur more frequently on campuses with diverse student bodies. Both Deppe (1989) and Chang (1996)<sup>1</sup> found very few direct relationships between diverse student enrollments and educational outcomes after four years of college, primarily because the quality of interracial contacts is a key determinant of many of these educational outcomes. Overall these studies support the notion that the benefits of a diverse student body can be maximized for individual students so long as the campus can develop opportunities for students to engage in positive social and academic interactions.

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<sup>1</sup> Deppe (1989) analyzed the 1986 longitudinal study of 1982 freshmen, collected by the Cooperative Institutional Research Program (CIRP), UCLA; Chang (1996) analyzed a later CIRP cohort, the 1989 longitudinal study of 1985 freshmen (also used in this Report). All of these studies employed controls for student background, employing a conservative test of effects by statistically removing the possibility that students entered with strengths on these outcomes.

## Adequate Representation

Adequate representation of racial/ethnic minorities is not only necessary to create opportunities for interactional diversity, but also because having too few students from underrepresented groups can produce negative effects for members of these minority groups. In environments that lack a diverse work force or population, underrepresented groups are regarded by majority group members as symbols rather than individuals, or as "tokens." In studies of severely underrepresented women, Kanter (1977) found that tokenism contributes to heightened visibility of the underrepresented group, exaggeration of group differences, and the distortion of the individuals' images to fit existing stereotypes. Additional studies confirm that severely underrepresented groups are more likely to underperform or think about dropping out of college, regardless of racial background and gender (Bynum & Thompson, 1983; Gosman, Dandridge, Nettles, & Thoeny, 1983; Spangler, Gordon, & Pipkin, 1978). For example, even white students on predominantly black campuses are found to undergo academic difficulties that some researchers attribute to their "minority status" (Bynum & Thompson, 1983; Gosman, Dandridge, Nettles, & Thoeny, 1983).

Adequate representation of racial/ethnic students is important for the academic success of African American and Hispanic college students as demonstrated in several national studies. After controlling for selectivity of college admissions and pre-college aspirations, both strong determinants of graduate degree aspirations, a recent longitudinal study showed increases in graduate degree aspirations among African American college students attending diverse colleges with black enrollments ranging from 9-

49% (Carter & Montelongo, 1998).<sup>2</sup> Compared with African Americans attending these racially diverse colleges, counterparts at colleges with very low African American enrollments and at institutions with very high African American enrollments were significantly less likely to increase their graduate degree aspirations four years after college. Another national study showed that, controlling for selectivity in admissions, high-achieving Hispanic students perceive lower racial tension on college campuses with relatively higher Hispanic enrollments (Hurtado, 1994). Perceptions of relatively low racial tension are, in turn, associated with better college adjustment outcomes and sense of belonging to the institution (Hurtado & Carter, 1997; Hurtado, Carter, & Spuler, 1996).<sup>3</sup> These findings suggest that underrepresented groups (particularly women and racial/ethnic minorities) find the college environment more comfortable, experience less stereotyping, and are able to achieve progress when they are adequately represented on college campuses.

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<sup>2</sup> The study utilizes the federally-sponsored Beginning Postsecondary Students Longitudinal Study of students who entered college in 1990 and were followed up in 1992 and 1994, with additional racial/ethnic enrollment data from the Integrated Postsecondary Educational Data System, administered by the National Center for Education Statistics.

<sup>3</sup> These series of studies focused on Hispanics who were among the highest achievers based on high school grades and performance on the PSAT, a sample in the National Study of Hispanic College Students. They were followed up for several years to determine how Hispanic students experienced college.

## Disrupting the Effects of Segregation

Simply increasing the numbers of racially or culturally different groups in an organization can have the effect of increasing conflict among groups who have no significant previous experience with each other (Blalock, 1967).<sup>4</sup> The potential for conflict exists when racially/ethnically diverse students come to college because each group (White, African American, and Latino) is likely to come from segregated racial/ethnic neighborhoods and high school environments. Orfield, Bachmeier, James & Eitle (1997) found that "in the Northeast, the West, and the South, more than three-fourths of all Latino students are in predominantly non-white schools" (p.10), indicating a severe level of segregation across the nation. Statistics also show that segregation is increasing for African Americans across the country. In the state of Michigan in 1994, according to one study, approximately 60% of all black high school students were attending schools in Michigan that were 90-100% minority in racial composition, only 19% of blacks were attending majority white schools (Orfield, et al., 1997). Further, research shows that growing up in a predominantly white neighborhood often results in attending a college with a high percentage of white students (Springer, 1995). Therefore, colleges that strive to diversify their student body provide the first opportunity for students to encounter and learn from peers with different cultural values and experiences.

Lack of prior experience with diversity among college students explains why campus

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<sup>4</sup> Referring to Black/White relations, Blalock (1967) theorizes that as the number of minority of individuals increases, the greater the likelihood that there will be conflict and competition with members of the majority. He does not theorize, however, how conflict can be minimized under conditions where increased diversity is inevitable. Educational institutions have the potential to minimize conflict.

studies report conflict or perceptions of conflict with changing racial/ethnic enrollments, but these studies also begin to reveal how that conflict can be tempered in particular educational environments. One national study found that on predominantly white, four-year college campuses, white students' perceptions of racial tension were greater than on campuses with higher percentages of black enrollments. (Differences in racial/ethnic enrollments were not related to Black or Chicano students' perceptions of tension). However, this study also revealed that perceptions of racial tension were lowest in environments where White, Black, and Chicano students perceived the faculty and administration to be student-centered in their concerns for student academic and personal development (Hurtado, 1992). Thus, if students thought they were valued at the institution, they perceived less racial tension. Another study found that student transition to college was facilitated by "validating experiences" on campuses that indicate to students they are accepted and welcomed in the college community, that they can be successful, that previous work and life experiences are legitimate forms of knowledge, and that their contributions are valued in the classroom (Terenzini, Rendon, Upcraft, Millar, Allison, Gregg, & Jalomo, 1994). This suggests that institutions with diverse student bodies must be attentive to creating conditions that diminish competition among groups and value the diversity that students bring to the classroom as an important part of making the most of learning that can occur in diverse classrooms.

College represents a critical opportunity to break the well-documented pattern of segregation perpetuated in educational settings that results in segregated living and work environments in later years (Braddock, 1980; Braddock & McPartland, 1988; Wells & Crain, 1994). Specifically, several researchers have posited that racial segregation tends to repeat itself "across the stages of the life cycle and across institutions when individuals have not had sustained experiences in desegregated settings"

(McPartland & Braddock, 1981, p.49). In their review of long term studies of education in desegregated environments, Wells and Crain (1994) extend this theory of the perpetuation of segregation to suggest that segregation is perpetuated across generations because "African Americans and Latinos lack access to informal networks" (p.533) that provide information, referrals and access to desegregated institutions and jobs. The empirical research also shows that high school racial composition (desegregated) largely predicts attendance at a predominantly white college; that employers use informal networks to fill jobs that require a college degree; and, finally, that Blacks who used desegregated social networks to find jobs had higher earnings (Braddock & McPartland, 1987). Minority access to jobs typically occupied by whites cannot often be attained without attending particular types of college: Utilizing a nine-year longitudinal study of 1971 college freshmen, Green (1982) found that African Americans who attended a predominantly white college were significantly more likely to report having white work associates and friends in the early career years. Recent research further emphasizes the importance of college in disrupting the pattern of segregation. Bowen & Bok (1998) examined college graduates from the classes of 1976 and 1989 at selective institutions and demonstrated that social interactions during college with others from diverse backgrounds increases the likelihood that African American and white graduates' postcollege work and school environments also include associates who are racial/ethnically diverse. Thus, the diversity of the student body at a college diminishes the chances that graduates

will be socially segregated in their adult lives.

Several major studies provide additional support for the long term benefits of education in diverse settings. First, these benefits to individuals are now confirmed across racial/ethnic groups in different national data bases. Analyses of three independently conducted national surveys show strong and consistent evidence that education in desegregated school settings resulted in a desegregated occupational and employment for African Americans, whites, and Mexican Americans over the long term (Braddock, Dawkins, & Trent, 1994). Participation in a diverse workforce is also beneficial in terms of economic earnings for college-educated white, Asian, Black and Hispanic workers (Tienda & Lii, 1987). Second, while Bowen & Bok (1998) also show individual benefits to African Americans in terms of higher earnings as a result of attending a selective institution, they also show benefits to society. These graduates participate in community activities, and enter professional career fields at significantly higher rates than African American counterparts who attended less selective, predominantly white institutions (Bowen & Bok, 1998). Greater leadership in the community was also evident among these graduates, primarily as a result of having had the opportunity to earn advance degrees and, in turn, "give back" to the community. Taken together the studies suggest that different minority groups benefit from education in a diverse setting and also contribute to society, and that whites also obtain experiences in diverse colleges that result in success in more diverse work settings after college.

#### **DIVERSE PEER GROUP CONTACT AND STUDENTS' LEARNING AND DEMOCRACY OUTCOMES**

**R**esearch has established that the peer group is one of the most important influences on a range of educational outcomes during college (Alwin, Cohen, & Newcomb, 1991; Astin, 1993). Studies of college students have established that learning occurs for students with peers outside of the

classroom (Kuh, 1993; Terenzini, Pascarella, & Blimling, 1996) as well as within classroom contexts. In a recent study, undergraduates identified at least 14 categories of educational outcomes that they had acquired in peer interactions outside the classroom. Among them were such outcomes as knowledge acquisition,

self-awareness, confidence, altruism, academic skills (i.e. learning how to learn), and learning about and gaining experience with people from different racial, ethnic, and cultural backgrounds (Kuh, 1993).

Numerous studies conducted in the last decade reveal consistent evidence regarding the importance of interaction specifically with diverse peer groups during college for learning outcomes. Findings from three different national, longitudinal data bases as well as several single-institution studies support this premise. Consistent effects of having diverse peer groups were evident in the multi-campus, National Study of Student Learning,<sup>5</sup> in which researchers examined students' openness to diversity of perspectives and challenge at the end of the first year of college. This measure of cognitively complex thinking was significantly associated with a variety of intergroup contact experiences that included residence on campus, participation in a racial cultural awareness workshop, and association with a peer group that was diverse in terms of race, interests, and values. In addition, this level of complex thinking was likely to occur for students who reported engagement in conversations if they explored different ways of thinking about a topic, and perceptions that the campus environment was non-discriminatory. The authors state that these activities and perceptions are associated with measurable gains in critical thinking in the first year of college (Pascarella, Edison, Nora, Hagedorn, & Terezini, 1996). Cognitive development during the first year of college was also significantly affected by students' out-of-class experiences including student

involvement in clubs and organizations as well as attendance at a racial/cultural awareness workshop (Terenzini, Springer, Pascarella, & Nora, 1994). These studies support the link between cognitive development and informal interactional diversity. Learning is associated with having diverse peers, an environment conducive to interactions for diversity, and opportunities for interaction afforded through campus programs that permit constructive engagement among diverse peers (e.g., race awareness workshops).

Subsequent work confirms that the diversity of peers, engaging conversations, and perceptions of the environment were also associated with openness to diversity of perspectives and challenge in the second and third year of college (Whitt, Pascarella, Terenzini, & Edison, 1998). Accordant with these findings, results show that a proxy for homogeneity of college peers (participation in a sorority and fraternity) was negatively associated with cognitive development and openness to diversity of perspectives and challenge (Pascarella, Whitt, Nora, Edison, Hagedorn, & Terenzini, 1996). This supports the theory that diverse peer interactions provide the discrepancy necessary to increase students' capacity to consider multiple perspectives.

Two distinct national CIRP cohorts of undergraduates provide additional evidence that support many of the empirical analyses presented in this report. Using a longitudinal national data base of students who entered college in 1987 and on whom the study followed-up in 1991, Hurtado (1997) found that academically-related intergroup contact was associated with a host of learning and democracy outcomes. Students who reported that they studied frequently with others from a racial/ethnic background different from their own reported growth on such learning outcomes as problem solving skills, critical thinking, and ability to work cooperatively. Stronger effects were evident on such democratic outcomes as cultural awareness, acceptance of people from different races/cultures, tolerance of different beliefs, and leadership. More extensive analyses

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<sup>5</sup> The National Study of Student Learning was sponsored by the Office of Educational Research Improvement, US Dept. of Education through a research grant to the National Center for Teaching, Learning, and Assessment. The sample population includes 23 participating institutions designed to approximate the Fall 1992 enrollment of college freshmen represented by ethnicity and gender.

of these data revealed how student involvement in college, which is a strong correlate of a wide range of cognitive and affective outcomes (Pascarella & Terenzini, 1991; Kuh, Schuh, Whitt, Andreas, Lyons, Strange, Krehbiel, & MacKay, 1993), is associated with frequent interaction across race/ethnicity (Hurtado, Dey, & Trevino, 1994).

Confirming findings from the National Study of Student Learning and research on earlier CIRP cohorts, a national study utilized the 1996 College Student Survey<sup>6</sup> and found positive effects of contact with diverse peers on students' leadership and cultural knowledge/understanding after four years of college (Antonio, 1998). The study revealed that students who attended a racial/cultural awareness workshop were likely to have high self-ratings on leadership ability and growth in cultural knowledge/understanding. In contrast, students who had a high proportion of close friends that were of the same race were least likely to report growth on cultural knowledge/understanding during college. Interracial interaction was a strong predictor of growth in cultural knowledge and understanding, as was participation in an ethnic student organization, for both white students and students of color. Overall, this study reveals that broadening of cultural knowledge and acceptance of group differences is contingent on positive interactions across race and that such connections can be enhanced through associations with students of color.

Other studies show that positive diverse peer interactions permit students to engage each other in complex social topics and issues, resulting in important educational outcomes. One study defines positive intergroup interaction on

campus as involvement with someone from a different race/ethnicity in opportunities to study together, attend social events, have intellectual discussions outside of class, and have meaningful and honest conversations about race and/or ethnic relations outside of class (Gurin, Peng, Lopez, & Nagda, forthcoming). Research confirms that students with interracial friendships report more frequent discussion of complex social issues (the economy and major social problems such as peace, human rights equality, and justice) (Springer, 1995). Engaging in discussions of racial issues during college is also associated with persistence toward a degree (Chang, 1996), higher degree aspirations among minority women (Tsui, 1995), and outcomes such as cultural awareness, commitment to promoting racial understanding, and commitment to developing meaningful philosophy of life (resolving existential dilemmas) (Astin, 1993).<sup>7</sup> For African Americans, positive interracial contact during college is related to African American satisfaction and less trauma experienced in the transition to college. In a causal model, Bennett (1984) showed how positive interracial contact leads to less transitional trauma, which in turn, is significantly related to a higher college GPA and lowers the intent to drop out of college. Overall these studies reveal the importance of positive interracial contact to students' thinking about complex issues, educational progress, satisfaction, and knowledge/skills that will be useful for their future roles in a pluralistic democracy.

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<sup>6</sup> The College Student Survey is collected by the UCLA Higher Education Research Institute as part of the Cooperative Institutional Research Program. The sample analyzed for this study involved 8,819 students attending 111 four-year, predominantly white institutions across the country.

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<sup>7</sup> All three studies utilized the 1989 CIRP followup of 1985 freshmen, the data described and utilized in empirical analyses of this report.

## Classroom Features That Maximize Diversity

Classroom diversity is most effective when accompanied by pedagogy that makes use of a diverse student body to enhance interaction and learning. In one study, instructors included extensive use of cooperative learning and problem-based learning approaches as they diversified the content of a human development course to cover the experiences of diverse groups. Researchers in that study found students mastered critical thinking skills and demonstrated declines in levels of ethnocentrism (MacPhee, Kreutzer, & Fritz, 1994). Another study found that although students entered a diversity course with different levels of cognitive development, virtually all students demonstrated increases in racial understanding during the course and reported their peers played an important role in this process (Ortiz, 1995). One classroom-based study (Adams & Zhou-McGovern, 1994) showed that college students demonstrate more complex ways of thinking on measures of epistemological reflection, as well as gains in moral development after taking a social diversity course designed to meet general education requirements. Students in the course who were resident assistants in college residence halls demonstrated twice the gains of other students, indicating that these students had the added benefit of engaging in problem-solving in their daily experience in college residence halls on issues of diversity.

In terms of classroom interaction, appropriate techniques and activities create opportunities to enhance learning across racial/ethnic groups as well as increase academic performance. When students work in ethnically mixed cooperative-learning groups, they gain in cross ethnic friendships as well as demonstrate increased academic achievement across all racial/ethnic groups (Slavin, 1995). Cooperative activities in the classroom result in reduction of stereotypes and prejudice among students (Wolfe & Spencer, 1996). Further, several programs designed to enhance learning in the classroom make explicit the need for ingroup and intergroup

affiliations and build unity across groups while acknowledging group differences.

In several studies of the University of Michigan's Intergroup Relations, Conflict, and Community Program, findings confirm identity development, more comfort with conflict as a normal part of social life, more positive intergroup interactions, increased social awareness, and long term effects (four years) on students' participation in activities with members of other racial/ethnic groups (Gurin, Peng, Lopez, Nagda, forthcoming; Zuniga, Nagda, Sevig, Thompson, & Dey, 1995). These are important skills for functioning in a diverse society.

It is important to note that the IRGCC program combines both classroom diversity content and interaction with diverse peers, attempting to link undergraduates' affective and cognitive skills as they learn how to engage across racial/ethnic, gender, and religious differences. Two qualitative studies of dialogues within the IRGCC Program have also been carried out at Michigan. One, conducted by the first director of the program, Ximena Zuniga, and other researchers, examined papers that students wrote in the first-year course. This qualitative analysis of the papers showed that there were three critical features of the learning experience. One theme in the papers stressed that dialogues provide a place where students could voice their *own* views and experiences and expect to be heard. Second, the students also wrote that it was important for them to learn to listen to the views and experiences of *other* students. Zuniga, Scalera, Nagda, & Sevig (forthcoming) emphasize that these two processes need to be augmented by a third theme in the papers, the importance of dealing with conflict. Students said that dialogues work best when they can "ask difficult questions," "when they can disagree," and "when they are helped to work with the conflict." Zuniga and her colleagues conclude that this third step "of working with the conflict" builds on "voicing" and "listening" and is

essential for accomplishing the broad goal of intergroup understanding.

A second qualitative study (Yeakley, 1998), examined *how* dialogues produce positive and negative changes in participants. Yeakley (1998) discovered four types of positive change: increased comfort, increased connection with students of other groups through friendship ties, increased understanding of different perspectives, and increased understanding of different identity group experiences. A majority of the participants reported *only* positive changes, although three in ten also reported at least some negative changes.

What produced positive and negative changes? Yeakley's analysis of these intensive interviews indicates that the most important, distinguishing experience was whether or not students had found dialogues a place where they could *share personal experiences*. One student described the process: "the first day of class, we set ground rules, and the first one was... we all have to be honest. But, you know, to be honest we had to have the rule, you don't attack the person. You can attack the ideas but not the person. I think everyone really held to that.... Then it is possible to get to the point where you can say, I understand where you could really have gotten that idea, but this is how it feels from my experience" (Yeakley, 1998, p. 118). When this happened, she concluded, students later became friends with members of other racial/ethnic groups.

Disclosure of personal experiences provided the means for the deepest levels of intergroup understanding because personal experiences provided illustrations and explanations for group differences. These concrete examples revealed what being a member of a different identity group was like, or in the words of one of the informants, "what makes that person a person" in terms of their identity

experiences (Yeakley, p. 120). Contact literature has discussed the importance of intimate rather than casual contact (Allport, 1954; Amir, 1976), but reference to intimate interaction remains fairly vague in this literature. It primarily refers to a relationship that allows individuating information to emerge, especially information that points to similarities. Intimacy is more developed conceptually in a new line of social psychological research known as relationship studies (Aron, 1992; McAdams, 1988; Reis and Shaver, 1988). These relationship scholars define intimacy as the sharing of what is innermost with others, and including the other within one's self. Researchers are giving increased emphasis to the importance of intimacy and to the role that friendship ties play in improving intergroup life (Herek and Capitanio, 1996; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). Thus, these studies confirm that providing students with opportunities to share perspectives about their own backgrounds in college and improving the quality of interaction among diverse peers has important implications for developing a respect for group differences and learning about commonalities with other groups in society.

Although studies on classroom diversity utilizing large national data sets are rare, those that have been conducted demonstrate positive effects on students. Specifically, national data show that taking courses in ethnic studies is associated with persistence toward a degree (Chang, 1996), self-reported increases in cultural awareness, and increases in students' personal goals to promote racial understanding (Astin, 1993). Students also reported they were more likely to vote in national elections on college campuses where a high proportion of faculty incorporated readings on different racial/ethnic groups and women into their courses (Astin, 1993). Taken together, these studies indicate that classroom diversity is associated with important academic and democratic outcomes.

## Effect of Diversity on Traditional Classroom Learning

**A**cknowledgement of group differences and interactions with peers of the same race/ethnicity also enhances student learning of traditional subjects like mathematics. In one outstanding example, a multicultural campus made use of observations of student cooperative activity among Asian American peers in learning mathematics and used the same model to implement a successful program to accelerate African American achievement in calculus (Fullilove & Treisman, 1990). The latter program illustrates how acknowledgment of group differences and learning on a diverse campus can result in new advances in student progress.

\* \* \* \* \*

In summary, these examples and the educational research on contact with diverse peer groups suggest that campuses that have successfully attracted sufficient numbers of students from different racial/ethnic groups are producing graduates with more critical thinking skills, who are at ease in addressing complex and sometimes conflict-laden problems, and who are more prepared to participate in a diverse democracy by acknowledging and respecting

group differences.

It is important to note that while much of this review is focused on the educational benefits of diversity to the individual, another body of work establishes how diversity is important to organizations and work environments as a whole (Cox, 1993). That is, tolerance for diversity is a characteristic of innovative organizations: "innovation is spurred by strong opinion -- and opinions often diverge. Thus, conflict management is crucial to ensuring that differences are handled constructively" in work environments (Morgan, 1989, p. 77). Most of this work derived from the business literature echoes the same conclusions evident in the educational literature: Both organizations and individuals stand to gain a great deal when diverse individuals and diverse perspectives are present, but effective management of cultural diversity is necessary to enhance its benefits to the organization and individuals. Higher education plays a central role in ensuring that graduates are prepared to become a part of the diversity that is inevitable in a society where one out of three Americans will be a member of a racial/ethnic minority group and most of the growth in new jobs will require a college degree (Justiz, 1994).

## INSTITUTIONAL COMMITMENT TO DIVERSITY

**I**f the mission of higher education is to prepare students with the skills necessary for functioning in a complex and increasingly diverse society, then an institutional commitment to structural diversity, classroom diversity and enhancing opportunities for informal interactional diversity all become central to this educational process. Several national studies have examined student perceptions of institutional commitment to diversity (perceptions that the institution is actively recruiting diverse individuals and promoting multicultural appreciation through campus activity). One study found that institutional commitment to diversity was

associated with perceptions of relatively low racial tension among African American, Chicano, and to some extent, white students (Hurtado, 1992). Perhaps more importantly, subsequent studies revealed that students reported higher college grade point averages (Chang, 1996) and increases in personal goals to promote racial understanding (Astin, 1993) on campuses where they perceived a relatively strong institutional commitment to diversity.

Several campus studies suggest that individuals on campuses have actively worked towards creating a more diverse environment because they believe diversity is central to the

educational process. Over 90% of faculty, staff, and students at two different campuses agreed with the statement that diversity is good for the institution and should be actively promoted by all campus constituents (Hurtado, et al. 1998; Dey, 1996); over 90% of faculty and staff believed that diversity of the student body is central to the educational process and two-thirds of all students stated they learned a great deal from listening to students from different racial/ethnic groups in class (Hurtado, et al., 1998); and over three quarters of white students and 85% of students of color stated that the numbers of underrepresented minorities should be increased at a selective, California campus (Loo & Rollison, 1986). One student eloquently stated in a study: "It's very difficult to teach people who come from unaccepting cultures to be accepting [of diversity] if they have no place to practice their acceptance," while an Asian American student pondered: "I mean, they can try to teach us diversity, but if there's not a diverse environment, how are you going to learn?" (Hurtado, et al., 1998). One multi-campus qualitative study of colleges that encourage student engagement showed that such "involving colleges" foster high expectations for student performance, minimize status distinctions among students, and demonstrate an unwavering commitment to multiculturalism (Kuh, et al., 1991). Many similar studies conducted on other campuses across the country confirm the educational value of diversity as part of the their mission.

The University of Michigan demonstrates its institutional commitment to diversity through classroom activity as well as providing informal opportunities for peer contact, and each educational activity depends on having a diverse student body. The University is a public research institution that places diversity as central to its mission and actively works to create the conditions for maximizing the learning benefits of a diverse study through several initiatives:

1. Its nationally recognized program on Intergroup Relations, Conflict, and Community, in which students are given opportunities to have

deep discussions that allow them to compare experiences and discover differences and similarity of values in freshmen seminars, courses in academic departments, and activities in residence halls. The program depends on bringing together students from diverse racial/ethnic backgrounds and was recently chosen as a national exemplar by President Clinton's Race Relations Panel.

2. Public celebrations of diversity, including Hispanic Heritage Month, Native American POW WOW, and one of the largest celebrations of Martin Luther King Day in the country that attracts nationally known scholars and public officials to campus. Such events depend on the work of sufficient numbers of Latino, Native American, and African American students to remain successful because they are organized primarily by these students with the assistance of the administration.

3. Numerous ongoing curricular initiatives combine course content with contact with diverse peers, including the development of a multicultural course requirement for all students in the College of Literature, Science, and Arts; the development of new living-learning communities that focus on diversity and democracy; and the integration of content on diversity issues in many freshman seminars.

4. Typical teaching issues are addressed now through faculty development activities that incorporate considerations of a diverse student body and multicultural training to enhance classroom teaching techniques. These ongoing efforts are integrated into work of the Center for Research on Learning and Teaching on campus.

The research evidence on learning and democracy outcomes in this report supports many of these initiatives to create diverse classrooms and increase opportunities for positive, informal interactions with diverse peers. These initiatives are part of Michigan's educational process and

would be seriously diminished if the student body were less diverse. These educational initiatives took years to bring to fruition and were successfully developed because Michigan began to educate a more diverse student body.

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## APPENDIX C

### THE STUDIES, METHODS, AND MEASURES

#### Overall Analytic Strategy

As described in the body of the Report, I conducted three sets of empirical analyses developed specifically for this litigation. Using national data from the Cooperative Institutional Research Program as well as data collected from students at the University of Michigan, these analyses provide a fair test of the effects that campus diversity has on the academic development and democratic values of college students. Standard, generally accepted approaches to systematic data collection and statistical analyses were used to produce this research. Together, the approaches used provide a conservative test of diversity's effects, by statistically accounting for relationships known or expected to contribute to student development before accounting for the effects of campus diversity. As such, the results provide a minimal estimate of diversity's effects, in that the analyses consistently afford other variables in the analysis (i.e., characteristics of students and colleges) a greater opportunity to account for, and possibly explain away, the influence of campus diversity on college students.

Figure 1 in the Report provides an overview of the general approach used in the analyses of the CIRP and Michigan Student Study data. I began by first identifying the most relevant data bases that could be analyzed to provide systematic, empirical evidence on the effects of campus diversity on student development, and then by identifying the specific variables available within these data bases that were most closely related to classroom and informal interactional diversity, and to learning and democracy outcomes. Once identified, each of the individual outcome variables was analyzed using a statistical methodology known as multiple regression analysis. The methodology allows one to develop a fair portrayal of the relationship between specific variables of interest and the outcome

variable, after controlling for the influence of other variables known (or expected) to bias the relationships of interest.

The primary variables of interest are those related to campus diversity in its many forms, in that we are interested in understanding how these variables affect (or predict) different student outcomes. One way to consider the effects of diversity on student outcomes is simply to consider the raw relationship, or correlation, between variables of interest. Unfortunately, these relationships tend to overstate the true degree to which campus diversity influences student development, as other known influences on student development are not considered. To correct for this shortcoming, these analyses use a standard set of variables as statistical controls. This allows us to provide reliably unbiased portrayals of the relationships of interest. Since students come to college with different attitudes, values, and experiences, these variables are first considered as possible explanations for the relationship between campus diversity and student development. Once this first block of control variables is considered, the analysis proceeds to consider the classroom and interactional diversity measures in order to determine whether these variables provide any additional explanatory power. By considering these variables in combination, the results produce a less biased view of the relationship between campus diversity and student outcomes.

In reviewing the results in the body of the Report, I concentrated on the relationships between the campus diversity measures and each of the learning and democracy outcomes considered. A basic indicator of the strength of these relationships with the outcome measures is found in the assessment of its statistical significance. A relationship is judged to be statistically significant

when its strength is such that it is unlikely to have emerged from the data simply on the basis of chance. We use the most common indicator of statistical significance in reviewing these results. For the white student sample, I only judge relationships to be significant when the odds are less than 1 in 20 that the relationship was simply due to random chance. Since probability levels are related to sample size, I use a slightly different criterion for the samples of African American and Latino students, the odds of less than 1 in 10 that the relationship was simply due to random chance. This approach provides clearly defined statistical evidence on the strength of relationship between the predictors of interest and each of the dependent variables.

In addition to considering statistical significance, given the multitude of educational outcomes that we consider, it is also important to consider the consistency of findings across the entire set of analyses. Since each of the educational outcomes considered in these analyses represents a different possible aspect of a student's development, a degree of consistency in the relationships across the outcome variables is additional evidence of the effectiveness of any particular characteristic of campus diversity at producing different kinds of learning and democracy outcomes among college students.

As noted above, my regression analyses were conducted on national data from CIRP as well

as data collected specifically from students at the University of Michigan. Since the data bases used for these analyses were designed by different individuals as well as for somewhat different purposes, I could not conduct precisely identical analyses using these different data bases, though I have sought to make the analyses as parallel as possible following the theoretical framework represented in Figure 1. It is important to consider the evidence from these two studies in combination, for it provides a more complete picture of the ways in which diversity affects the educational development of college students than could any single data base. For example, while data collected nationally is necessarily somewhat generic in terms of the kinds of questions that might be asked, this limitation is offset by the fact that when data are collected from many different institutions, this allows us to compare directly the effects of structural diversity by examining the degree to which campus diversity creates conditions and opportunities for students to interact with diversity. In contrast to the national data base, the set of evidence derived directly from students attending the University of Michigan allows us the opportunity to directly examine how these issues operate on our campus, especially as it relates to specific programs on the University of Michigan campus.

### The CIRP Study

The national data were collected through the Cooperative Institutional Research Program (CIRP) conducted by the Higher Education Research Institute at the University of California, Los Angeles under the auspices of the American Council on Education. The CIRP is a well-known and respected research program that is the nation's longest and largest on-going empirical study of American higher education. All told, the CIRP program has collected data from more than 1,500 institutions and surveyed more than 9 million

students and 500,000 faculty since its inception in 1966.

The specific data base used for this investigation is drawn from students who entered college in 1985. These students were surveyed during the summer and early fall of 1985 as they prepared to enter college. In addition, these students also completed follow-up surveys in 1989 (four years after college entry) and 1994 (nine years after college entry) to assess their experiences since entering college. The availability of data from two